

Final Report

Oracle Document Navigation Prototype Usability Testing

Conducted 

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Executive Summary

Method

A total of twenty-two people participated in a usability study comparing two versions of the Oracle Document Navigation Prototype with the Documentation Library. The first round of tests (with eleven participants) was conducted in [REDACTED]. The second round of tests (with a different set of eleven participants and a revised prototype) was conducted in [REDACTED]. Both rounds were conducted in a usability laboratory at Oracle headquarters. Each one-on-one session lasted about 90 minutes and was videotaped for later review (copies provided).

The goal of the research was to measure user performance and opinions on a set of benchmark tasks, in order to identify potential usability "defects" in the prototype. Participants were a mix of developers, database administrators, and support personnel. Most had some previous experience with the Oracle Documentation Library. Users viewed the site with Netscape Communicator 4.7 on a 17" monitor at 1024 by 768 pixels resolution.

After hearing a very brief overview of test objectives, users were given a series of pre-defined tasks that covered the major elements of the user interface. In each round of testing, six selected tasks were performed using both versions of the prototype as well as the Documentation Library, so that users could make direct comparisons between tools. Participants verbalized what they were doing and thinking as they performed each task. A task ended either when the goal was attained or when participants said they would give up. At the completion of each task, users rated its difficulty on a seven-point scale.

Results

In Round 1, the Prototype outperformed the Library in both user performance and user ratings. For the six common tasks, using the Library took 15% longer than using the Prototype. Users completed 100% of the tasks using the Prototype, but only 82% using the Library. The mean usability rating was 4.1 for the Library and 5.3 for the Prototype (where 1=Very Hard and 7=Very Easy). And the mean post-session rating directly comparing the two tools was 6.3 (where 1=Library Much Better and 7=Prototype Much Better).

For Round 2, several changes were made to make the Prototype even easier to use, by simplifying the presentation of its navigation tools. Again, the Prototype outperformed the Library in both user performance and user ratings. For the same six common tasks, using the Library took 28% longer than using the Prototype. Users completed 97% of the tasks using the prototype, but only 82% using the Library. The mean usability rating was 4.0 for the Library and 5.4 for the Prototype (where 1=Very Hard and 7=Very Easy). And the mean post-session rating directly comparing the two tools was 6.4 (where 1=Library Much Better and 7=Prototype Much Better). Compared to Round 1, more users noticed the Prototype's wide array of navigation tools, including the Virtual Book feature, which impressed all users in both Rounds.

Recommendations

After two rounds of testing, several additional Prototype changes could improve user performance and acceptance even more.

1. Further improve the display of choices on the Prototype's home page.
2. Clarify the relationship between the keyword field and the "pre-selected" list in the Virtual Book.
3. Replace full-text search checkboxes with radio buttons.
4. Navigate directly to the first instance of the selected topic in a document and highlight each instance in the document.

Methods

Procedure

A total of twenty-two people participated in a usability study comparing two versions of the Oracle Document Navigation Prototype with the Documentation Library. The first round of tests (with eleven participants) was conducted in [REDACTED]. The second round of tests (with a different set of eleven participants and a revised prototype) was conducted in [REDACTED]. Both rounds were conducted in a usability laboratory at Oracle headquarters. Each one-on-one session lasted about 90 minutes and was videotaped for later review (copies provided).

The goal of the research was to measure user performance and opinions on a set of benchmark tasks, in order to identify potential usability "defects" in the prototype. Participants were a mix of developers, database administrators, and support personnel recruited by User Focus, Inc. from a list of Oracle users provided by the User Interface Lab. Most had some previous experience with the Oracle Documentation Library. Gary Felfoldy of User Focus conducted all test sessions and logged user actions and comments. Users viewed the site with Netscape Communicator 4.7 on a 17" monitor at 1024 by 768 pixels resolution.

After hearing a very brief overview of test objectives, users were given a series of pre-defined tasks that covered the major elements of the user interface. In each round of testing, six selected tasks were performed using both versions of the prototype as well as the Documentation Library, so that users could make direct comparisons between tools. Participants verbalized what they were doing and thinking as they performed each task. A task ended either when the goal was attained or when participants said they would give up. At the completion of each task, users rated its difficulty on a seven-point scale.

Tasks

Task 1 (Used for both Library & Prototype)

You want to set a default role for a user. What command do you use?

Task 2 (Both)

What is the difference between PCTFREE and PCTUSED?

Task 3 (Prototype only)

What is the default length for a CHAR variable? What is the maximum length?

Task 4 (Prototype only)

You want to use the following functions in your code. Find an example of each that shows the correct syntax.

- a) ADD_MONTHS
- b) DBMS_LOB.TRIM
- c) SQLCODE

Task 5 (Both)

You want to use an INSTEAD OF trigger in your code. Find an example that shows the correct syntax.

Task 6 (Both)

You have written a PL/SQL program that dies because of a raised exception. Find an example of a PL/SQL exception handler.

Task 7 (Prototype only)

What causes ORA "twenty-four" and what should you do to recover?

Task 8 (Prototype only)

You have never used two-phase commit. What things might go wrong with it?

Task 9 (Both)

Some of your queries are running slowly. A support person suggests that you set the ALWAYS_ANTI_JOIN parameter in init.ora to use the "sort merge algorithm". What is the exact syntax to use?

Task 10 (Both)

A query using a cursor is running slowly. You want to examine it using the catalog view V\$SQL. What is the column in this view that contains the text of the SQL statement for the cursor?

Task 11 (Prototype only)

You have been asked to give a presentation to top management on your plans to take advantage of LDAP and CORBA within Oracle8i. You expect to do a few days of reading.

- a) Find a large body of information on LDAP.
- b) Since you will have to explain what the acronym mean, find what LDAP stands for.
- c) Find a large body of information on CORBA.
- d) Since you will have to explain what the acronym mean, find what CORBA stands for.

Task 12 (Prototype only)

While analyzing a large volume of sales data, your queries are slow. A support person suggests that you optimize your star queries. What steps should you take to do so?

Task 13 (Prototype only)

You cannot recover your database because all copies of the current control file have been destroyed by a media failure. What are the alternatives to recreate it?

Task 14 (Prototype only)

You are getting an error while calling a stored procedure. A support person asks you to send the DESCRIBE output for the procedure. What items will this output identify about the procedure?

Task 15 (Prototype only)

Under what circumstance would you use the ABORT option to shut down the database?

Task 16 (Prototype only)

Start at the "compact" list of books. Assume that your database or application is running too slowly. Find the information that will help you.

Task 17 (Prototype only)

Start at the "compact" list of books. Find information about the new features in the latest release.

Task 18 (Prototype only)

If you have not already tried the navigation paths, try each and comment on its usefulness/intuitiveness:

- a) List of books (summary view)
- b) List of books (tree view)
- c) Virtual book ("blue" search)
- d) Master glossary
- e) Master index. (Were you aware that this existed in the current documentation set?)

Participants

Round 1:

Name	Job	Company	Doc. Library Usage
David	Sr. Product Mgr.	Centura Software	4 times per month
Praveen	Sr. Consultant/Oracle DBA	eTouch Systems	3-4 times per day
Rajiv	Lead DBA	GAP Inc.	4 times per month
Edmond	Software Developer	Agilent Technologies	1 time per week
Mike	Internet Application Architect	SunGuard Treasury Systems	6 times per year
Ronald	CTO	Financial Engines	1 time per month
John	Prod. Mgr., Data Warehousing	Oracle	1 time per week
John	IT Mgr.	Creative Leisure	5 times per month
Robin	Owner/Network Svcs. Consultant	Silicon Mirror	None
Tim	SR. QA Engineer	Digital Insight Corp.	3 times per week
Alex	DBA	ReleaseNow.com	1 time per day

Round 2:

Name	Job	Company	Doc. Library Usage
Barry	Sr. Staff, Schwab Technology	Charles Schwab	1 time per month
Andrea	Sr. Tech. Staff, Web Development	Oracle	1 time per week
Allen	DBA	Hewlett-Packard	2 times per day
Can	Oracle DBA	iPass Inc.	2 times per week
Brent	Sr. Software Engineer	Space Systems/Loral	2 times per week
William	Database Project Lead	U.S. Postal Service	6 times per year
Alan	Director, Software Engineering	Interlinear Technology Inc.	1 time per month
Hua	DBA	Symantec Corp.	None
Ariel	Managing Principal	Data Movement Research	2 times per week
Yolanda	Principal Consultant	Data Movement Research	10 times per month
Anu	Software Engineer	Hewlett-Packard	2 time per week

Prototype Enhancements for Round 2

For the virtual book:

- Added an explanatory lead-in on the main page.
- Made the form more compact, to avoid scrolling and make it easier to see results.
- Allow pre-selected topics to be chosen from a list.
- Added an index on the results page, with entries drawn from multiple books.
- Added a bibliography to the results page.
- On the results page, added links to PDF for all books that contribute to the virtual book, so that users print individual topics, chapters, or books for offline reading.

For the tree-view search:

- Added an explanatory lead-in on the main page.
- Made the form more compact, to avoid scrolling and make it easier to see results.
- On the results page, added the total number of hits, and how many books they come from.
- On the results page, added an instruction to scroll if necessary to see results.
- If there are more than 300 results, added a hint to try the virtual book or use the controls to filter by book or category.
- Linked book titles to TOCs for corresponding books; users must click on “+” icons to expand.

For the list of books:

- Removed the tree view of books, but left the compact list of books.
- Moved the link to list of books near the front of the main page.
- Allowed users to select a category from a dropdown list, after which icons appear to indicate which books are in that category.

For the main page:

- Everything was visible without scrolling.
- The Home, Feedback, and Help links were made more visible.
- Introductions were added to each search method.
- The main keywords were highlighted in red.

For the master index:

- Shortcuts were added.
- The ability to search the index was added.

General Results

Round 1

- Users loved the virtual book feature, although few recognized or used it without prompting.
- Most users were attracted to the tree search, and then stuck with it for all tasks.
- Users complained that they did not recognize the prototype's array of navigation tools.
- When directed to it, most users liked the organization and functionality of the "compact" list of books.
- Mean ratings for the subset of six tasks performed using both methods (where 1=Very Hard and 7=Very Easy) were:
 - Documentation Library = 4.1
 - Document Navigation Prototype = 5.3
- The mean overall post-session rating for the Prototype was 5.9 (where 1=Very Hard and 7=Very Easy).
- Several users remarked that their ratings would have been even higher had they discovered the Prototype's full functionality sooner.
- The mean post-session rating directly comparing the two methods was 6.3 (where 1=Library Much Better, 7=Prototype Much Better).
- The percentage of tasks successfully completed (subset of six tasks performed using both methods) was:
 - Documentation Library = 82% (27 of 33)
 - Document Navigation Prototype = 100% (28 of 28)
- The mean time per task (subset of six tasks performed using both methods) was:
 - Documentation Library = 3 minutes, 36 seconds (15% longer)
 - Document Navigation Prototype = 3 minutes, 7 seconds

Round 2

- Users again liked the virtual book feature. In Round 2, more recognized it without prompting.
- Most users tended to stick with one search until it failed.
- More users noticed the prototype's array of navigation tools than in Round 1.

- Mean ratings for the subset of six tasks performed using both methods (where 1=Very Hard and 7=Very Easy) were:
Documentation Library = 4.0
Document Navigation Prototype = 5.4
- The mean overall post-session rating for the Prototype was 6.0 (where 1=Very Hard and 7=Very Easy).
- The mean post-session rating directly comparing the two methods was 6.4 (where 1=Library Much Better, 7=Prototype Much Better).
- The percentage of tasks successfully completed (subset of six tasks performed using both methods) was:
Documentation Library = 82% (27 of 33)
Document Navigation Prototype = 97% (32 of 33)
- The mean time per task (subset of six tasks performed using both methods) was:
Documentation Library = 4 minutes, 37 seconds (28% longer)
Document Navigation Prototype = 3 minutes, 37 seconds

Usability Issues and Recommendations

Round 1

Issue 1.1 (Impact = High):

Users did not discover the full range of navigational aids in the prototype. It took many users several tasks before they even noticed the “frequently accessed” hyperlinks.

Recommendations:

Use fewer interaction modes. Group the search tools into four types, each of which could occupy one clearly titled quadrant of the Home Page:

- Frequent Types (4 hyperlinks, e.g., [SQL and PL/SQL syntax and commands](#))
- Frequent Tools (4 hyperlinks, e.g., [Master Index](#))
- Keyword Search
- Virtual Book

Above the four quadrants, add the simple instruction “Use one of these four search methods”.

Consider numbering the quadrant titles 1 through 4.

Issue 1.2 (Impact = High):

Most users had to be directly prompted to use the prototype's virtual book.

Recommendations:

The four-quadrant layout recommended above should draw more attention to the virtual book.

Consider adding a brief description below the title of each quadrant.

Provide help for each search tool.

Issue 1.3 (Impact = High):

Several users never scrolled to see the search tools located below the prototype's "tree search".

Recommendation:

Make all search functionality visible without scrolling (see recommendation for Issue 1).

Issue 1.4 (Impact = High):

Many used the prototype's tree search exclusively throughout the test session, although most did not notice the radio button or checkbox modifiers associated with the tree search.

Recommendations:

Giving equal visual "weight" to the four navigation "quadrants" may keep users from gravitating to the most familiar tool.

Put the following GUI tools below the Keyword text box and "Search" button:

- "Search In" list box [default = All books]
- "Search" list box [default = Search all topics within selected book(s)]
- "Search only text headers" checkbox
- "Expand all results" checkbox

Issue 1.5 (Impact = High):

When using the Documentation Library, users were **very** annoyed when they taken to the top of a document rather than to the specific topic they had selected.

Recommendations:

Navigate directly to the first instance of the topic.

Consider adding a tool (like the browser's "Find" function) that would allow users to find subsequent instances in the selected document.

At least highlight each instance in the document.

Issue 1.6 (Impact = Medium):

Most users were confused by the display of the search fields on the tree search results page. Since it took up so much room at the top of the page, several users invoked a repeat search (or a repeat virtual book) without ever looking at the results.

Recommendations:

Users are not used to seeing search results in the tested format.

Restrict the page title to "Search Result".

Below the title, "Your search found a total of X matching topics in Y document sections".

Consider whether "sections", "books", or "volumes" is the appropriate term for the top level of the results tree.

Label the (now more compact) search fields "Modify your search" or remove them entirely and offer a "Modify Search" button that returns users to the Home Page.

Issue 1.7 (Impact = Medium):

On the first day of testing, most users did not recognize the number shown in parentheses after each search document as the number of matching topics within that document.

Recommendation:

There was no confusion on the second day of testing when "X matching topics" was displayed.

No further change recommended, except to improve legibility by restricting the underlined hyperlink to the name of the document itself.

Issue 1.8 (Impact = Medium):

Most users reacted negatively to the 2- or 3-character "Shortcuts", especially when the shortcut table got very large.

Recommendation:

Replace the tree with a button that invokes the browser's "Find" dialog.

Issue 1.9 (Impact = Medium):

When users saw a virtual book for the first time, there was some confusion about the structure of the book.

Recommendations:

Make it immediately obvious that all books have four sections by labeling the jump-link section "This book has four sections".

Make the jump links easier to read by underlining only the significant words (Background Information, How-to's, Examples, and Detailed Reference Info).

Issue 1.10 (Impact = Low):

Few users ever noticed the [Back to home page](#) link at the upper right of the prototype's second-level pages.

Recommendation:

Abbreviate the three upper-right hyperlinks ([Home](#), [Feedback](#), [Help](#)) and use a larger, bold font.

Include these links on all prototype pages.

Round 2

Issue 2.1 (Impact = High):

Despite design changes for Round 2, a few users still did not notice the full array of choices on the prototype's home page. E.g., several users never noticed the "frequently accessed" links that exactly matched the type of information in tasks.

Recommendations:

Above the four quadrants, add the simple instruction **"Use one of these four search methods"**.

Number and shorten the description of each quadrant:

- 1. Frequently used links**
- 2. Master Index**
- 3. Keyword Search** (Note: It's full-text by default only!)
- 4. Virtual Book**

Add a [Search Tips](#) hyperlink next to the above instruction.

Consider numbering the quadrant titles 1 through 4.

Consider presenting the Master Glossary just like, and immediately under, the Master Index. Also, use a two-level shortcut list similar to that of the Master Index.

Reduce distractions from the overall "wordiness" of the field labels and links.

- For both Search and Virtual Book, replace "Enter a word or phrase..." with "Keyword(s)".
- Replace "Display topics" with "Display".

Replace "Look up an [error message](#)" with "[Error Messages](#)".

Replace "List of [books](#)" with "[Oracle8i Books](#) (complete list)".

Replace "Find a short definition in the [Master Glossary](#)" with "[Master Glossary](#) (definitions)".

When searches return no results, add another tip that says "Return [Home](#) and try a different search method."

Issue 2.2 (Impact = High):

Several users did not understand the relationship between the keyword field and the “pre-selected” list in the Virtual Book tool.

Recommendations:

Left-align the text entry field and the drop-down list.

Put a boldface, capitalized “OR” between the entry field and the drop-down list (also left-aligned).

Use the field labels “Keyword(s)” and “Select”.

Left-align the “Generate Book” button with the text field and list.

Issue 2.3 (Impact = High):

Few users ever noticed the checkboxes associated with the full-text search.

Recommendation:

Replace each checkbox with a pair of radio buttons.

- ☒ Search entire text ☐ Search titles only
- ☒ Collapse results ☐ Expand results

Left-align the radio buttons with the keyword field and the drop-down lists.

Issue 2.4 (Impact = High):

Users continued to object when navigation took them to the start of a chapter, rather than to the first instance of the topic.

Recommendations:

Navigate directly to the first instance of the topic.

Highlight each instance in the document.

Issue 2.5 (Impact = Medium):

Early in Round 2, users did not know to click on the icon to expand book titles into topics.

Recommendations:

Better integrate the “expand” (+) and “collapse” (–) icons into the book title.

Continue to provide a separate Table of Contents hyperlink for each book.

Change the instruction to say “Click a book title to view its matching topics.”

Issue 2.6 (Impact = Medium):

Users at first did not understand the structure produced by a Virtual Book.

Recommendation:

Replace the long explanation with a boldfaced header and list the following boldfaced contents, including number of matches, and using and avoiding hyperlinks as follows:

Virtual Book Contents

- **Background Information** (6 matching topics across 4 books)
- **Related Tasks** (2 matching topics across 2 books)
- **Examples** (2 matching topics in 1 book)
- **Detailed Reference Information** (1 matching topic)
- **Index Entries** (12 matching topics across 6 books)
- **PDF files for printing** (No matching topics)

When a content section is empty, do not underline the title, and do add the following explanation:

Issue 2.7 (Impact = Low):

Some virtual book shortcuts are useless (e.g., when ALL matches start with the same initial characters).

Recommendations:

Build in some intelligence so that useless shortcuts do not take up valuable screen real estate.

Issue 2.8 (Impact = Low):

Like in Round 1, some users complain that large shortcut tables are “low-tech”.

Recommendation:

In a later release, allow users to turn the shortcut display on and off.

Consider using only single-character or two-level shortcuts.

Issue 2.9 (Impact = Low):

Like in Round 1, users did not notice the Home hyperlink.

Recommendation:

Double the separation between the three upper-right hyperlinks (**Home**, **Feedback**, **Help**) and remove the gray background to make them more legible.

Issue 2.10 (Impact = Low):

Most users liked the complete "list of books", although few perceived any use for the [Figure List](#) and [Preface](#) hyperlinks.

Recommendation:

Even if none of the other prototype tools are implemented, at least replace the current "Document Library" home page with the (much more complete and flexible) "list of books".

Issue 2.11 (Impact = Low):

Some users never use the browser's "Find" tool.

Recommendation:

Include a "Search Tips" link on all pages, and include "Find" as one tip.

Issue 2.12 (Impact = Low):

Most users never noticed the interMedia Text link, even when told that a keyword search was available for the Document Library.

Recommendation:

Integrate the search link into the page-top instructions as follows:

Select a specific document or

New! [Search](#) 8.1.6 documentation with interMedia Text

Issue 13 (Impact = Low):

Users had the most difficulty with Task 1 (find the command to set a default role for a user).

Recommendation:

On full-text search results pages, include search tips that recommends expanding books with the most matching topics.

Issue 2.14 (No Change Recommended):

Users understood and used the two-level shortcuts in the Master Index.

Recommendations:

Retain the latest design of the Master Index, including

- Two-level "Shortcuts to Letters".
- Providing full books names for each entry.
- Identifying the multiple entries per book on separate rows.
- Using an icon (➤) to identify the first entry per book.

Issue 2.15 (No Change Recommended):

In Round 2, users recognized the “X matching topics” number shown in parentheses after each book in the search results.

Recommendation:

Continue to use this format.

Results by Task

Task 1 (Library & Prototype):

You want to set a default role for a user. What command do you use?

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		05:01		3	
2	Y		03:02		6	
3		Y		01:39		5
4	N		07:33		1	
5		Y		04:56		5
6	Y		04:42		4	
8	Y		02:07		5	
9		Y		06:26		3
10	N		08:42		2	
11		Y		03:57		6
Total	4Y, 2N	4Y				
Mean			04:21	04:14	3.5	4.8

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	N		04:51		1	
2		Y		00:56		6
3	N		07:40		1	
4		Y		06:12		3
5	N		09:04		3	
6		Y		08:05		2
7	Y		04:29		3	
8		Y		09:18		5
9	Y		01:00		7	
10		N		11:09		3
11	N		04:23		4	
Total	2Y, 4N	4Y, 1N				
Mean			05:14	07:08	3.2	3.8

Task 2 (Library & Prototype):

What is the difference between PCTFREE and PCTUSED?

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		01:35		4	
2		Y		04:56		5
3	Y		00:37		7	
4		Y		01:12		7
5	Y		02:48		5	
7	Y		03:03		6	
8		Y		00:57		6
9	Y		04:30		5	
10		Y		02:07		6
11	Y		01:01		7	
Total	6Y	4Y				
Mean			02:16	02:18	5.7	6.0

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1		Y		02:01		7
2	Y		03:47		5	
3		Y		05:18		6
4	Y		01:06		5	
5		Y		04:10		6
6	Y		04:57		4	
7		Y		01:55		6
8	Y		09:05		5	
9		Y		01:58		6
10	Y		03:08		5	
11		Y		01:12		6
Total	5Y	6Y				
Mean			04:25	02:46	4.8	6.2

Task 3 (Prototype Only):

What is the default length for a CHAR variable? What is the maximum length?

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		Y		05:46		4
2	Y	Y	01:28	02:17	5	4
3	Y	Y	00:47	04:39	7	5
4	Y	Y	01:34	01:57	7	6
5	Y	Y	02:46	03:00	6	5
6	Y	Y	06:10	07:49	4	4
7	Y	Y	01:18	05:51	7	4
8	Y	Y	00:41	01:21	7	7
9	Y	Y	01:42	00:27	6	7
10	Y	Y	00:56	04:49	7	4
11	Y	Y	03:19	00:56	5	7
Total	10Y	11Y				
Mean			02:04	03:32	6.1	5.2

Task 4 (Prototype Only):

You want to use the following functions in your code. Find an example of each that shows the correct syntax.

- a) ADD_MONTHS
- b) DBMS_LOB.TRIM
- c) SQLCODE

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		N		12:01		5
2	N	Y	04:13	06:09	4	5
3	N	Y	04:03	07:03	6	7
4	Y	Y	09:25	07:31	6	6
5	Y	N	09:50	15:35	5	5
6	Y	Y	06:02	08:28	4	6
7	N	Y	11:03	05:50	5	6
8	Y	Y	07:47	04:22	5	7
9	Y	Y	14:17	01:19	5	7
10	N	N	7:56	07:24	4	6
11	Y	N	7:34	08:20	6	5
Total	6Y, 4N	7Y, 4N				
Mean			08:13	07:38	5.0	5.9

Task 5 (Library & Prototype):

You want to use an INSTEAD OF trigger in your code. Find an example that shows the correct syntax.

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		01:19		4	
2	Y		02:10		7	
3		Y		00:44		7
4	Y		05:05		6	
7		Y		03:51		7
8	Y		05:08		2	
9		Y		02:35		5
10	N	Y	05:20	00:36	1	7
11		Y		00:49		6
Total	4Y, 1N	5Y				
Mean			03:36	01:43	4.0	6.4

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		07:37		4	
2		Y		01:29		6
3	Y		06:56		5	
4		Y		00:50		7
5	Y		03:42		5	
6		Y		01:22		6
7	Y		04:35		5	
8		Y		12:01		4
9	Y		00:51		7	
10		Y		01:16		7
11	Y		05:24		3	
Total	6Y	5Y				
Mean			04:51	03:24	4.8	6.0

Task 6 (Library & Prototype):

You have written a PL/SQL program that dies because of a raised exception. Find an example of a PL/SQL exception handler.

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		03:07		5	
2		Y		02:01		4
3	Y		01:23		6	
4		Y		02:19		7
5	Y		01:51		6	
6		Y		02:07		4
7	Y		05:28		1	
8		Y		02:30		3
9	Y		06:10		4	
10		Y		03:21		5
11	Y		01:25		7	
Total	6Y	5Y				
Mean			03:14	02:28	4.8	4.6

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1		Y		07:03		4
2	Y		02:57		3	
3		Y		03:43		6
4	Y		01:00		5	
5		Y		01:30		5
6	Y		02:49		3	
7		Y		00:39		7
8	Y		02:05		7	
9		Y		01:16		7
10	Y		06:00		2	
11		Y		01:09		7
Total	5Y	6Y				
Mean			02:58	02:33	4.0	6.0

Task 7 (Prototype Only):

What causes ORA “twenty-forty” and what should you do to recover?

Results

There were too few data to analyze (only one observation per prototype).

Task 8 (Prototype Only):

You have never used two-phase commit. What things might go wrong with it?

Results

There were too few data to analyze (only one observation per prototype).

Task 9 (Library & Prototype):

Some of your queries are running slowly. A support person suggests that you set the ALWAYS_ANTI_JOIN parameter in init.ora to use the "sort merge algorithm". What is the exact syntax to use?

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		03:58		4	
2	Y		00:52		6	
3		Y		06:58		4
4	Y		04:32		6	
5		Y		00:19		7
6	N		09:28		3	
7		Y		06:02		3
8	Y		01:11		6	
9		Y		06:45		3
10	Y		05:10		4	
11		Y		01:26		7
Total	5Y, 1N	5Y				
Mean			04:12	04:18	4.8	4.8

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		03:53		5	
2		Y		02:22		6
3	N		09:21		2	
4		Y		00:56		5
5	Y		06:29		2	
6		Y		01:01		6
7	Y		04:32		4	
8		Y		05:20		5
9	Y		02:34		5	
10		Y		08:00		3
11	Y		08:17		3	
Total	5Y, 1N	5Y				
Mean			05:51	03:32	3.5	5.0

Task 10 (Library & Prototype):

A query using a cursor is running slowly. You want to examine it using the catalog view V\$SQL. What is the column in this view that contains the text of the SQL statement for the cursor?

Results - Round 1

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1	Y		02:06		1	
2		Y		02:10		6
3	N		06:48		1	
4		Y		07:15		5
7	Y		02:55		4	
8		Y		05:38		2
9	N		04:45		1	
10		Y		01:48		6
11		Y		01:40		6
Total	2Y, 2N	5Y				
Mean			04:08	03:07	1.8	5.0

Results - Round 2

User	Successful?		Time		Rating	
	Library	Prototype	Library	Prototype	Library	Prototype
1		Y		00:58		7
2	Y		00:49		6	
3		Y		01:36		5
4	Y		01:32		5	
5		Y		02:53		6
6	Y		05:51		2	
7		Y		07:30		5
8	N		06:29		1	
9		Y		00:50		7
10	Y		04:56		4	
11		Y		03:11		3
Total	4Y, 1N	6Y				
Mean			03:55	01:50	3.6	5.5

Task 11 (Prototype Only):

You have been asked to give a presentation to top management on your plans to take advantage of LDAP and CORBA within Oracle8i. You expect to do a few days of reading.

- Find a large body of information on LDAP.
- Since you will have to explain what the acronym mean, find what LDAP stands for.
- Find a large body of information on CORBA.
- Since you will have to explain what the acronym mean, find what CORBA stands for.

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
2		Y		06:16		6
4		Y		11:44		7
5	Y	Y	12:21	05:58	7	7
6		Y		04:42		6
8	Y		06:42		5	
9		Y		01:55		7
10	Y	Y	04:21	07:39	5	6
11		Y		08:45		7
Total	3Y	7Y				
Mean			07:48	06:43	5.7	6.6

Task 12 (Prototype Only):

While analyzing a large volume of sales data, your queries are slow. A support person suggests that you optimize your star queries. What steps should you take to do so?

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		N		07:31		1
2	Y	Y	11:38	01:16	4	5
3	Y		03:32		5	
4	Y		04:25		7	
7	Y		12:13		2	
8	Y		01:29		4	
9	Y		01:55		6	
10	Y		04:28		4	
Total	7Y	1Y, 1N				
Mean			05:40	04:24	4.6	3.0

Task 13 (Prototype Only):

You cannot recover your database because all copies of the current control file have been destroyed by a media failure. What are the alternatives to recreate it?

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		N		06:05		5
2	Y	N	02:20	05:34	6	2
8	Y		01:43		6	
9	Y		01:12		7	
10	Y		06:49		6	
Total	4Y	2N				
Mean			03:01	05:50	6.3	3.5

Task 14 (Prototype Only):

You are getting an error while calling a stored procedure. A support person asks you to send the DESCRIBE output for the procedure. What items will this output identify about the procedure?

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		N		05:54		1
2	Y	Y	02:30	05:41	6	6
3	N	N	10:25	19:05	1	5
4	Y	Y	06:11	05:37	3	4
5		Y		02:33		7
6		Y		04:05		5
7	Y	N	01:56	16:33	7	3
8	N	N	11:48	09:43	2	2
9	Y	Y	02:36	00:38	7	7
10	Y	Y	04:25	03:45	4	6
11	N	Y	13:55	02:47	2	4
Total	5Y, 3N	7Y, 4N				
Mean			06:37	06:56	4.0	4.5

Task 15 (Prototype Only):

Under what circumstance would you use the ABORT option to shut down the database?

Results

User	Successful?		Time		Rating	
	Proto 1	Proto 2	Proto 1	Proto 2	Proto 1	Proto 2
1		Y		00:54		7
2	N	Y	02:40	01:24	6	6
3	Y	N	00:54	03:04	7	1
4	Y	Y	03:03	01:32	7	6
5		Y		02:01		7
6		Y		02:05		5
7	Y	Y	07:54	01:45	5	6
8	Y	Y	03:23	02:58	3	7
9	Y	Y	01:12	00:22	6	7
10	Y	Y	00:39	01:18	7	7
11	Y	Y	01:01	02:05	7	7
Total	7Y, 1N	10Y, 1N				
Mean			02:36	01:46	6.0	6.0

Task 16 (Prototype Only):

Start at the “compact” list of books. Assume that your database or application is running too slowly. Find the information that will help you.

Results

There were too few data to analyze (fewer than two observations per prototype).

Task 17 (Prototype Only):

Start at the “compact” list of books. Find information about the new features in the latest release.

Results

There were too few data to analyze (fewer than two observations per prototype).

Task 18 (Prototype Only):

If you have not already tried the navigation paths, try each and comment on its usefulness/intuitiveness:

- a) List of books (summary view)
- b) List of books (tree view)
- c) Virtual book (“blue” search)
- d) Master glossary
- e) Master index. (Were you aware that this existed in the current documentation set?)

Results

There were too few data to analyze (fewer than two observations per prototype).

Appendix

Statement of Informed Consent

Task Instructions

Statement of Informed Consent

Purpose:

You have been asked to participate in a usability evaluation of Oracle's online Documentation. By participating in this evaluation, you will help us make the information easier to navigate and use. This evaluation is designed to test the design of the tool; it is not intended to test your individual performance in any way.

Evaluation Procedure:

You will be asked to perform some typical tasks and answer some questions about your information needs. While you work, I will videotape your interactions and record information about how you use the tools. Afterwards, I will talk with you about your impressions. If other team members stop by to observe from the Control Room, they may want to participate in the discussion as well.

Confidentiality:

I will use the data you give us, along with the information I collect from other participants, to make recommendations aimed at improving users' experience with the documentation. To ensure confidentiality, I will not associate your name with your data.

Breaks:

We will not have any scheduled breaks. However, you may take a break at any time.

Procedure to Withdraw:

You may withdraw from the evaluation at any time.

If you agree to these terms, please indicate your acceptance by signing below.

Signature: _____

Printed Name: _____

Task Instructions

Procedure:

- Each task is described on a separate page.
- I will read the task aloud.
- Ask any questions you have
- Indicate when you are ready to begin
- Think aloud as you perform the task
- Describe step-by-step what you are doing, not just what you are thinking
- Indicate when you have finished the task
- Answer the questions at the bottom of the page
- Make comments & suggestions